



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,713	07/25/2003	Randall Malterer	87324.1800	1897

7590 11/01/2004

BAKER & HOSTETLER LLP
Washington Square
Suite 1100
1050 Connecticut Avenue, N.W.
Washington, DC 20036

EXAMINER

KERNS, KEVIN P

ART UNIT PAPER NUMBER

1725

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/626,713

Applicant(s)

MALTERER, RANDALL

77

Examiner

Kevin P. Kerns

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☒ Claim(s) 26 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/8/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 94, 98, and 102. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to because 78' should be changed to 78 in Figure 1. In Figure 3, all instances of "COOPER" should be changed to "COPPER". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and

Art Unit: 1725

where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency.

Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because "is disclosed" should be deleted from the 1st line. In the 5th and 6th lines, "in accordance with the present invention" should also be deleted. Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities: in paragraph [0023], 1st line, "then" should be changed to "than". On page 12, 3rd line from the bottom, "144" should be changed to "14". In paragraph [0041], 3rd line, "24" should be changed to "26" after "channel". In paragraph [0041], 7th line, "and" should be replaced with "," after "61". In paragraphs [0041]-[0043], all instances of "passageway(s)" should have the reference number "120" after this term, instead of the incorrect "116" or "118". In paragraph [0043], 2nd line, "114,116" should be replaced with "116,118". Appropriate correction is required.

Claim Objections

5. Claims 26 and 27 are objected to because of the following informalities: in the 1st line of these claims, "method" should be changed to "tool device". Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 1-3, 19, and 22-27 are rejected under 35 U.S.C. 102(b) and/or 35 U.S.C. 102(a) as being anticipated by the applicant's admitted prior art (paragraphs [0002]-[0007] of specification). Note: the applicant's admitted prior art does not provide any indication of a date that the prior art was known to be applicable as a conventional chill block system, and the applicant is requested to provide the prior art date of this conventional chill block system.

The applicant's admitted prior art discloses a chill block, a method for its assembly, and the use of the chill block in a tool device as an assembly, in which the assembly includes a first surface of a chill block (base) made of steel coupled (bonded

by grease and/or other connecting means) to a second surface of a chill block (base) made of copper, such that the chill block assembly includes first and second chilling means defining a chill block passageway therebetween, with the chill block assembly arranged within a tool device (mold defining molten metal inlet means and shaping means) that includes molten metal overflow means from the die/mold cavity (paragraphs [0002]-[0007] of specification).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (paragraphs [0002]-[0007] of specification).

The applicant's admitted prior art discloses the elements of claims 1-3 above. The applicant's admitted prior art does not specifically disclose the forming of the first surface or chill block in a ceramic mold, as well as the specific types of steel, copper, and surface hardness of the materials. However, one of ordinary skill in the art would have recognized that the use of a ceramic mold instead of a metal mold (both of which are refractory materials commonly used in casting processes), as well as use of any of the three types of steel and beryllium copper to obtain a surface hardness of 30 to 70

Rockwell "C" scale, would have been obvious substitutions of materials to a metal casting artisan, as these materials are functional equivalents (as well as conventional materials for use in casting processes), and a reasonable expectation of success would occur upon use of one or more of the combinations of these conventional, equivalent materials.

10. Claims 4-8, 15-18, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (paragraphs [0002]-[0007] of specification) in view of Cheskis et al. (US 5,343,926).

The applicant's admitted prior art discloses the elements of claims 1 and 19 above. The applicant's admitted prior art does not specifically disclose the rapid solidification spray casting process, the thickness of 0.5 inches for the first material/layer, bonding of a third material to a side of the second material, and machining steps.

However, Cheskis et al. disclose a metal spray forming process and apparatus that uses multiple nozzles having at least two metal spray regions, in which the thickness of the spray materials is controlled by the speed of the moving substrate and flow rate of the atomizing gas, such that the spray materials are preferably copper or copper alloys, with the first and second spray deposits (16,17) forming coatings of second and third materials onto the moving substrate (first metal material) with varying degrees of thickness, resulting in a nearly uniform metal composite material 20 having desired physical properties (minimum of porosity) obtained via spray casting (abstract;

column 2, lines 63-68; column 3, lines 1-2, 11-47, and 59-66; column 4, line 11 through column 9, line 41; and Figures 1 and 2). Although not specifically disclosed by Cheskis et al., one of ordinary skill in the art would have recognized the need for at least a step of light machining (column 9, lines 35-38) of the edges of the substrate and/or the first and second spray deposits, as scattered/uneven spray patterns would result in a non-uniform (varying thickness) cast composite product.

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the chill block, the method for its assembly, and the use of the chill block in a tool device as an assembly, as disclosed/suggested by the applicant's admitted prior art, by modifying the process of manufacture of the chill block by using a rapid solidification spray casting process, the thickness of 0.5 inches for the first material/layer, bonding of a third material to a side of the second material, and machining steps, as taught/suggested by Cheskis et al., in order to obtain a nearly uniform metal composite material having desired physical properties, including a minimum of porosity (Cheskis et al.; column 1, lines 10-13; column 2, lines 63-68; column 3, lines 1-2, 11-14, 33-35, and 59-66; and column 4, lines 11-15, 41-46, and 59-63).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Waters et al., Ashok et al., and McHugh et al. references are also cited in PTO-892.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns 10/28/04*
Examiner
Art Unit 1725

KPK
kpk
October 28, 2004